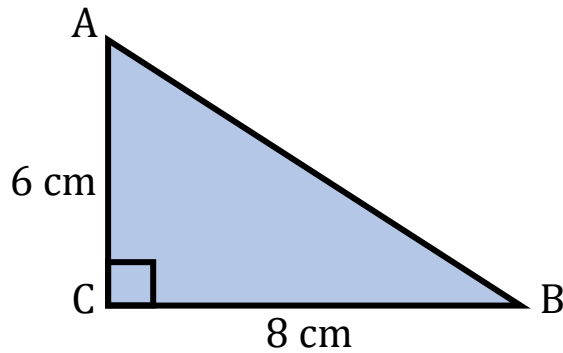


Pythagoras

1. ABC is a right angled triangle.
Find the length of AB.



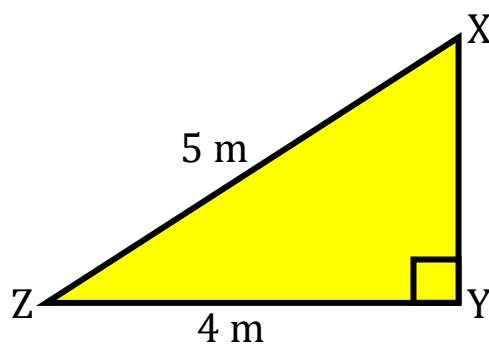
$$6^2 + 8^2 = c^2$$

$$c^2 = 100$$

$$c = \sqrt{100} = 10 \text{ cm}$$

(3 marks)

2. XYZ is a right angled triangle.
Find the length of YZ.



$$5^2 - 4^2 = a^2$$

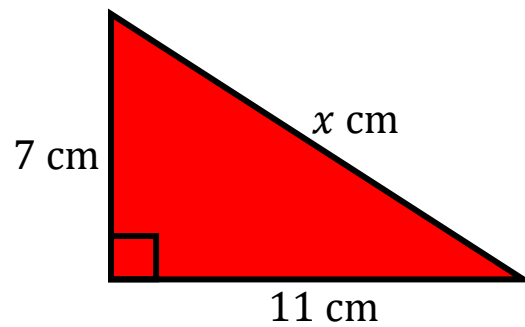
$$a^2 = 9$$

$$a = \sqrt{9} = 3 \text{ m}$$

(3 marks)

Pythagoras

3. Find the length of x .



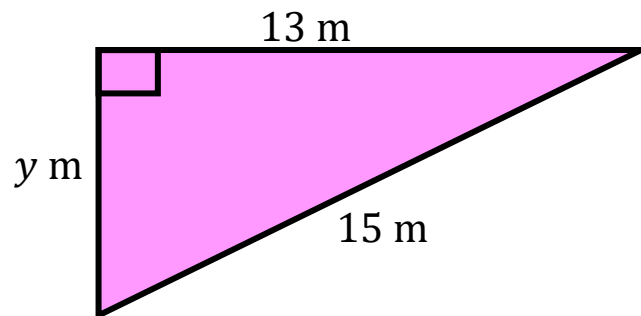
$$7^2 + 11^2 = x^2$$

$$x^2 = 170$$

$$x = \sqrt{170} = 13.04 \text{ cm}$$

(3 marks)

4. Find the length of y .



$$15^2 - 13^2 = y^2$$

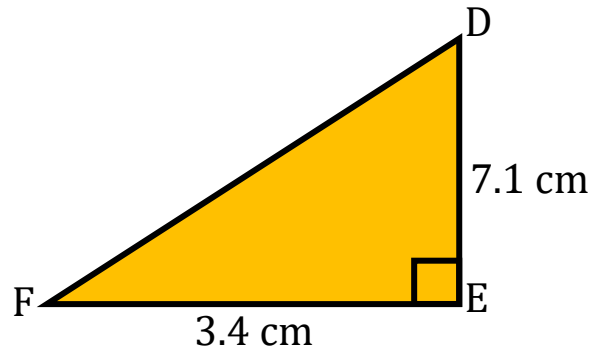
$$y^2 = 56$$

$$y = \sqrt{56} = 7.48 \text{ m}$$

(3 marks)

Pythagoras

5. DEF is a right angled triangle.
Find the length of DF.



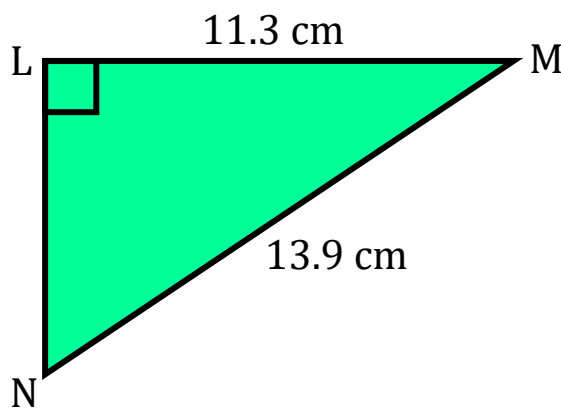
$$3.4^2 + 7.1^2 = DF^2$$

$$DF^2 = 61.97$$

$$DF = \sqrt{61.97} = 7.87 \text{ cm}$$

(3 marks)

6. LMN is a right angled triangle.
Find the length of LN.



$$13.9^2 - 11.3^2 = LN^2$$

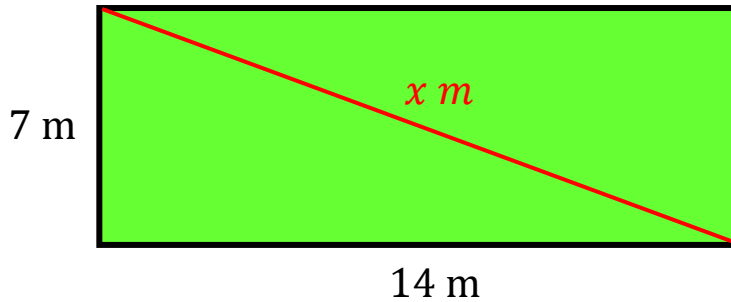
$$LN^2 = 65.52$$

$$LN = \sqrt{65.52} = 8.09 \text{ cm}$$

(3 marks)

Pythagoras

7. Shown below is a rectangle.
Find the length of the diagonal.



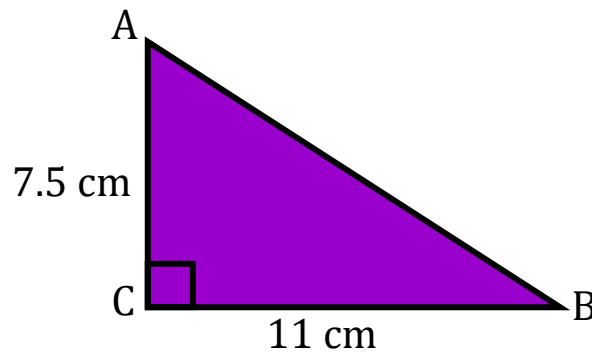
$$7^2 + 14^2 = x^2$$

$$x^2 = 245$$

$$x = \sqrt{245} = 15.65\text{ m}$$

(3 marks)

8. ABC is a right angled triangle.
Find the perimeter of the triangle.



$$7.5^2 + 11^2 = AB^2$$

$$AB^2 = 177.25$$

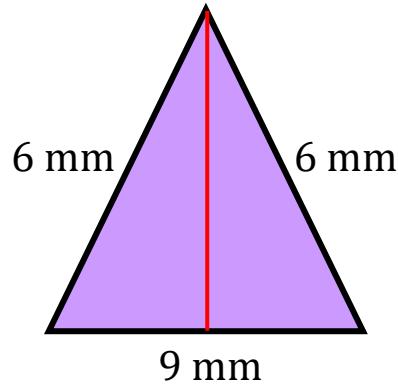
$$AB = \sqrt{177.25} = 13.31\text{ cm}$$

$$\text{Perimeter: } 7.5 + 11 + 13.3 = 31.8\text{ cm}$$

(4 marks)

Pythagoras

9. XYZ is an isosceles triangle.
Find the area of the triangle.



$$6^2 - 4.5^2 = h^2$$

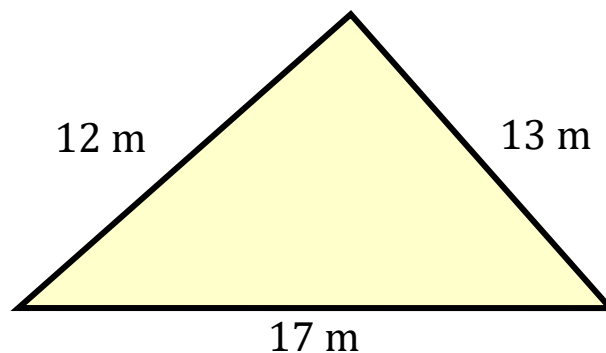
$$h^2 = 15.75$$

$$x = \sqrt{15.75} = 3.97 \text{ mm}$$

$$\text{Area: } \frac{3.97 \times 9}{2} = 17.86 \text{ mm}^2$$

(4 marks)

10. Below is a triangle.
Is this triangle right angled? Show all workings.



$$12^2 + 13^2 = 17^2$$

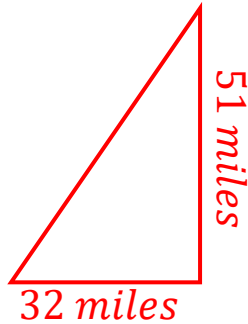
$$313 \neq 289$$

It's not right angled

(3 marks)

Pythagoras

11. A car drives 32 miles east from town A to town B.
It then travels 51 miles north to town C.
What is the direct distance from town A to town C?



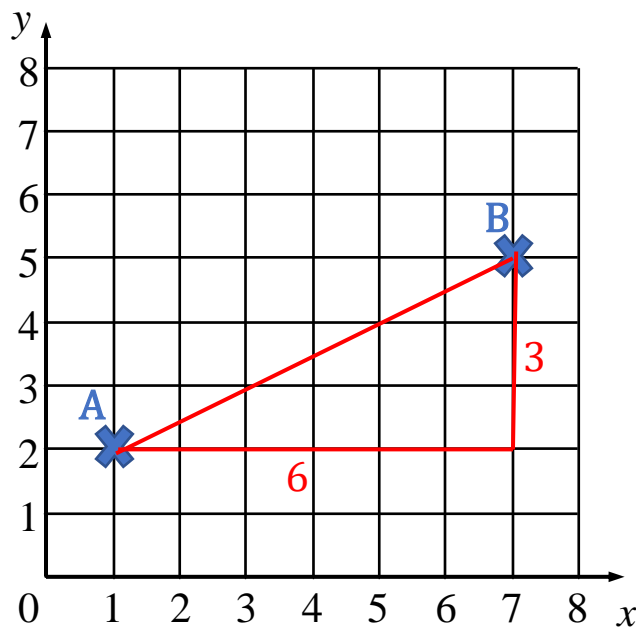
$$32^2 + 51^2 = AC^2$$

$$AC^2 = 3625$$

$$AC = \sqrt{3625} = 60.21 \text{ miles}$$

(3 marks)

12. Work out the distance between coordinates A and B.



$$6^2 + 3^2 = AB^2$$

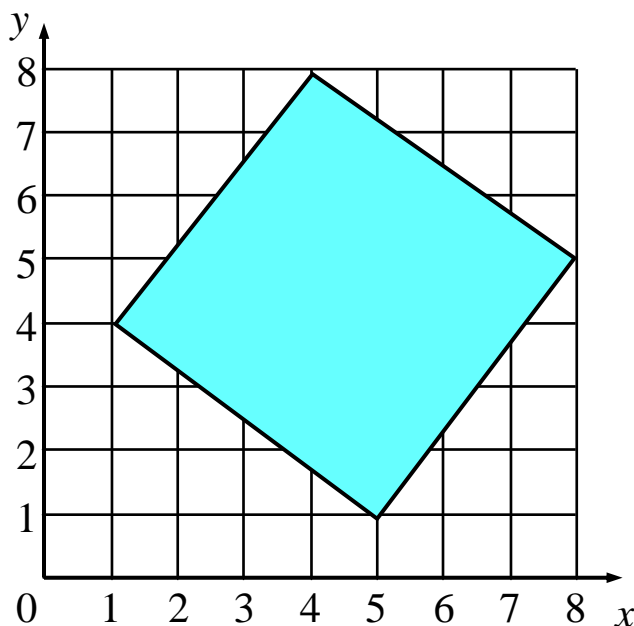
$$AB^2 = 45$$

$$AB = \sqrt{45} = 6.71 \text{ miles}$$

(3 marks)

Pythagoras

13. Work out the area of the square.



Length of the square: $4^2 + 3^2 = c^2$

$c^2 = 25$

$c = \sqrt{25} = 5$

Area: $5 \times 5 = 25 \text{ units}^2$

(4 marks)

14. Point A has coordinates (-2, 5)
Point B has coordinates (5, 12)
Calculate the length of the line segment AB.

$7^2 + 7^2 = AB^2$

$AB^2 = 98$

$AB = \sqrt{98} = 9.9 \text{ units}$

(4 marks)